



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,898	12/22/2004	Christopher Greenway	540-542	3194
23117	7590	09/18/2006	EXAMINER	
NIXON & VANDERHYE, PC			BRIGGS, NATHANIEL R	
901 NORTH GLEBE ROAD, 11TH FLOOR				
ARLINGTON, VA 22203			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/518,898	GREENWAY ET AL.	
	Examiner Nathanael Briggs	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 22 December 2004.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-6 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 22 December 2004 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12/22/2004; 4/29/2005</u>	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Buhrer (US 5,132,822).
4. Regarding claim 1, Buhrer discloses a switchable coupler (see figures 2 and 4, for instance) having a first optical waveguide (23, 25) defining an inlet port (41) for a first unpolarized light input and a first outlet port (43), and a second optical waveguide (22, 24) defining an inlet port (40) for a second unpolarized light input and a second outlet port (42), a polarization splitter (44, 45) device positioned between said waveguides (23-25) to split said first unpolarized light input and said second unpolarized light input into respective refracted (61) and reflected (69) polarized components, the waveguides (23-25) being arranged to transmit said refracted (61) and reflected (69) polarized components of said first light input by total internal reflection (column 5, lines 55-57) in the direction of said first outlet port (43), and the refracted (61) and reflected (69) polarized components of said second light input by total internal reflection (column 5,

lines 55-57) in the direction of said second outlet port (42), a first electro-optical switch (10, 46) positioned in the paths of said refracted (61) and reflected (69) polarized components of said first light input, said first electro-optical switch (10, 46) being operable to recombine said refracted (61) and reflected (69) polarized components of said first light input and to switch these combined components towards said second outlet port (42), a second electro-optical switch (11, 47) positioned in the paths of said refracted (61) and reflected (69) polarized components of said second light input, and said second electro-optical switch (11, 47) being operable to recombine said refracted (61) and reflected (69) polarized components of said second light input and to switch these combined components to said first outlet port (43). Claim 1 is therefore unpatentable.

5. Regarding claim 2, Bührer discloses a switchable coupler, as in claim 1 (see figures 2 and 4, for instance), in which said polarization splitter device (44, 45) includes liquid crystal (column 5, lines 42-44) positioned between said waveguides (22-25). Claim 2 is therefore unpatentable.

6. Regarding claim 3, Bührer discloses a switchable coupler, as in claim 2 (see figures 2 and 4, for instance), in which said liquid crystal material defines two separate cells (44, 45), one of said liquid crystal cells (45) serving to split said first unpolarized light input, and the other of said liquid crystal cell (44) serving to split said second unpolarized light input. Claim 3 is therefore unpatentable.

7. Regarding claim 4, Bührer discloses a switchable coupler, as in claim 1 (see figures 2 and 4, for instance), in which at least one of said electro-optical switches (10,

11) includes liquid crystal (column 5, lines 14-17) positioned between said waveguides (22-25), and an electric field device (column 5, lines 14-17) is provided to generate an electric field across said liquid crystal to operate the electro-optical switch. Claim 4 is therefore unpatentable.

8. Regarding claim 5, Buhrer discloses a switchable coupler, as in claim 4 (see figures 2 and 4, for instance), in which said liquid crystal material defines two separate cells (10, 11), and one of these liquid crystal cells (10, 11) forms part of each said electro-optical switch. Claim 5 is therefore unpatentable.

9. Claim 6 is rejected under 35 U.S.C. 102(b) as being anticipated by Baker (US 4,784,470).

10. Regarding claim 6, Baker discloses a method of coupling first and second inputs of unpolarized light (see figures 1, for instance) having steps of splitting (12) said first (20) and second inputs (26) into respective refracted and reflected polarized components, transmitting said refracted and reflected components of said first input (20) to a first electro-optical switch (16) operable to recombine the said refracted and reflected components of said first input (20) and to switch the recombined output from a first outlet (22) to a second outlet (24), transmitting said refracted and reflected components of said second input (26) to a second electro-optical switch (18) operable to recombine said refracted and reflected components of said second input (26) and to switch said recombined output from said second outlet (24) to said first outlet (22), and selecting the operation of said first (16) and second (18) electro-optical switches to couple said first (20) and second (26) inputs into an outlet (22, 24) from the group

comprising said first outlet (22) and said second (24) outlet. Claim 6 is therefore unpatentable.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathanael Briggs whose telephone number is (571) 272-8992. The examiner can normally be reached on 8:30 AM to 5:00 PM (EST) Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathanael Briggs  
September 12, 2006

  
ANDREW SCHECHTER  
PRIMARY EXAMINER